

Trends in Green Power Policies

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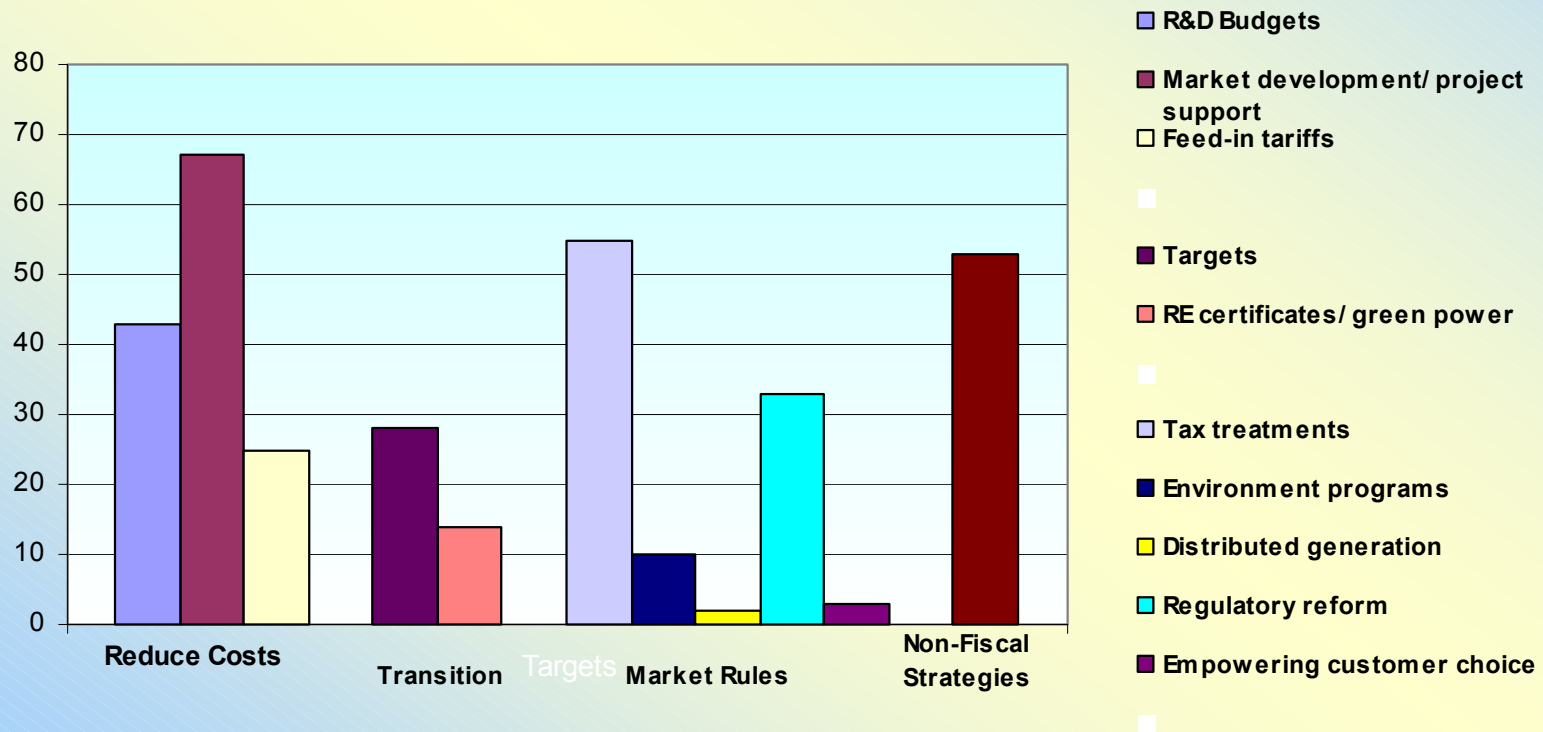
Outline

- **Renewable energy policies**
- **Trends**
- **Impacts**
- **An issue with cost**
- **Implications**
- **Conclusions**

Policy Groups

- **+/- 250 measures tracked**
- **1st Group: *Cost Reduction***
 - **RD&D, project support and feed-in tariffs**
- **2nd Group: *Transition***
 - **Targets, and means to achieve them**
- **3rd Group: *Market Rules***
 - **Direct valuation of benefits in liberalised markets**

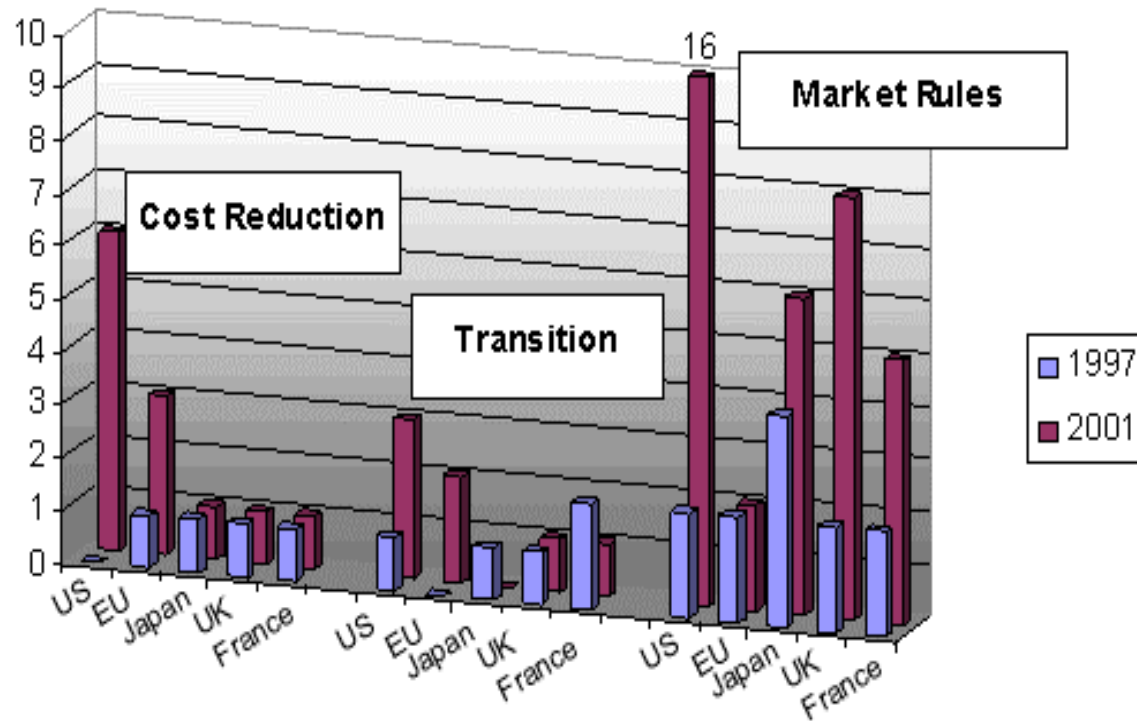
Number of Entries for Current IEA Renewable Policies



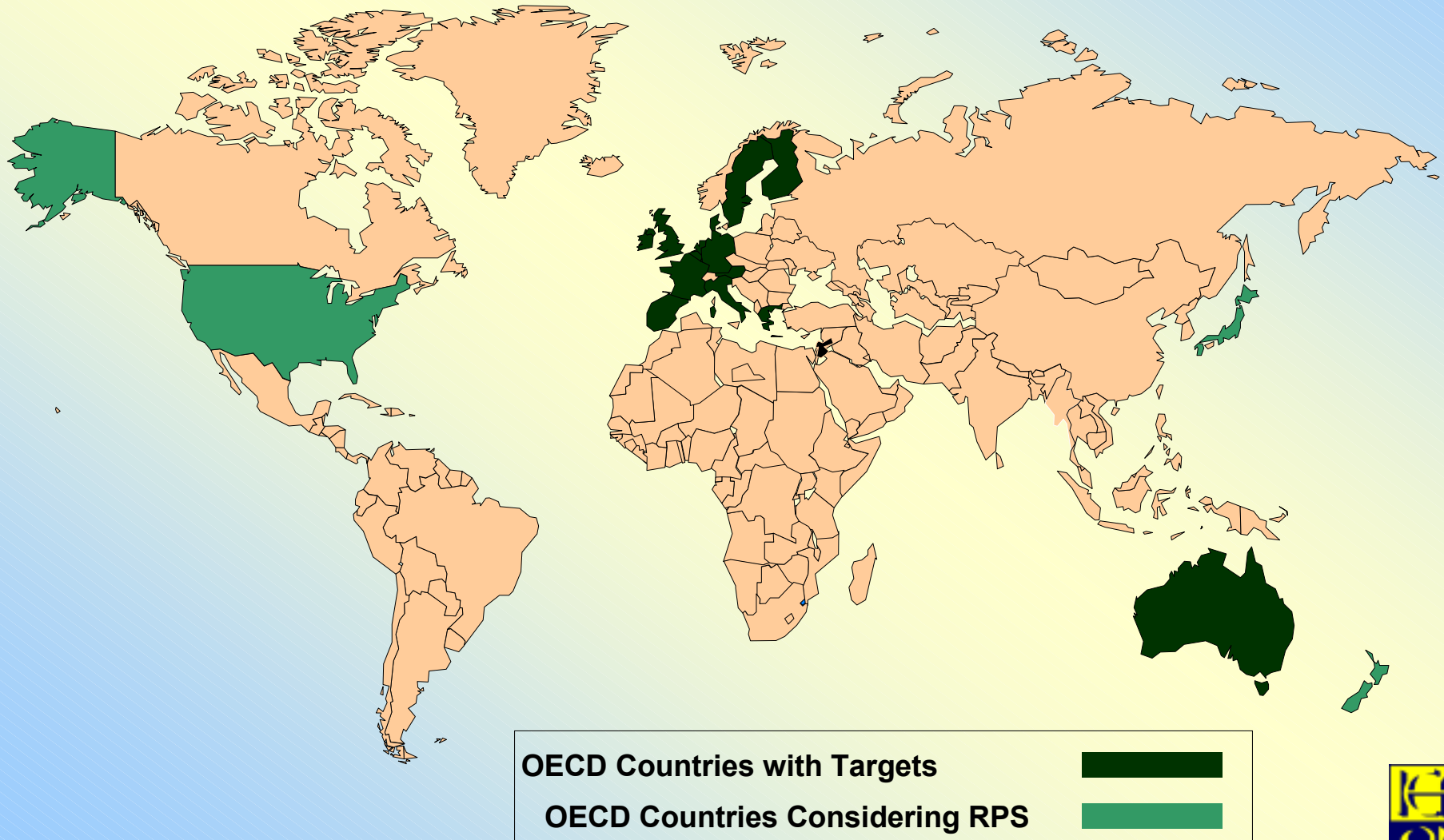
Characterisation

- ***Cost Reduction and Transition:*** aimed at promoting renewables for their assumed benefits;
- ***Transition:*** combines support for assumed benefits with increased competition;
- ***Market Rules:*** valuation of specific benefits for which RETs can compete.

Policy Progression 1997 - 2001



IEA Countries' Transition Policies



Targets

Country	planned (%)	What	When
Austria	78.1	% electricity from renewables	2010
Sweden	60	% electricity from renewables	2010
Portugal	45.6	% electricity from renewables	2010
Finland	35	% electricity from renewables	2010
Spain	29.4	% electricity from renewables	2010
Italy	25	% electricity from renewables	2010
France	21.0	% electricity from renewables	2010
Denmark	29.0	% electricity from renewables	2010
Greece	20.1	% electricity from renewables	2010
Germany	12.5	% electricity from renewables	2010
Ireland	13.2	% electricity from renewables	2010
Netherlands	12.0	% electricity from renewables	2010
Luxembourg	5.7	% electricity from renewables	2010
UK	10	% electricity from renewables	2010
Belgium	6.0	% electricity from renewables	2010
Norway	7 TWh	Wind +heat from renewables	2010
Turkey	2	% of total electricity from wind	2010
Japan	3.2	% electricity from renewables	2010
Czech Republic	5-6	% of total primary energy	2010
Hungary	6	% electricity from renewables	2010
Switzerland	3.5 Twh	Electricity +heat from renewables	2010
Korea	2	% of total primary energy	2006
Australia	12.5	% electricity from renewables	2010
No Official numerical national targets in place / or still under discussion: Canada, New Zealand, USA			

Policies to Accelerate Markets

country	main strategies, old	new strategies or what's under discussion
Austria	feed-in tariffs	Target with feed-in tariffs for new renewables and tradable green certificates for small hydro
Australia	portfolio standard	Increased portfolio standard
Belgium	feed-in tariffs	Target with tradable green certificates
Canada	no target	MW goal with incentive tariff
Denmark	feed-in tariffs	Target with tradable green certificates
Finland	energy taxes and environmental duties	energy taxes and environmental duties , green electricity offerers
France	tendering	Target with tendering
Germany	feed-in tariffs	Target with feed-in tariffs
Greece	feed-in tariffs	Target with feed-in tariffs
Ireland	tendering	Target with tendering
Italy	feed-in tariffs	Target with tradable green certificates
Japan	targeted subsidies	Feed-in tariffs
Luxembourg	feed-in tariffs	Target with feed-in tariffs
Netherlands	portfolio standard	Target with tax shifting, feed-in tariffs and TRECs
New Zealand	no target	Portfolio standard under discussion
Portugal	feed-in tariffs	Target with feed-in tariffs; security based
Spain	feed-in tariffs	Target with feed-in tariffs
Sweden	rebates & energy taxes	Rebates & energy taxes , green electricity offerers
UK	tendering	Target with tradable green certificates
US	no national target/State rules	Portfolio standard with tradable certificates/under discussion/ continued State rules

Market Rules

- Policies that directly monetize the value of policy goals;
 - Renewables not the focus but they can advantageously compete;
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- Customer choice provides first opportunity for the public to participate broadly in energy decision process;
 - Environment programs should benefit, don't always, it depends on design.

Toward Commercialisation

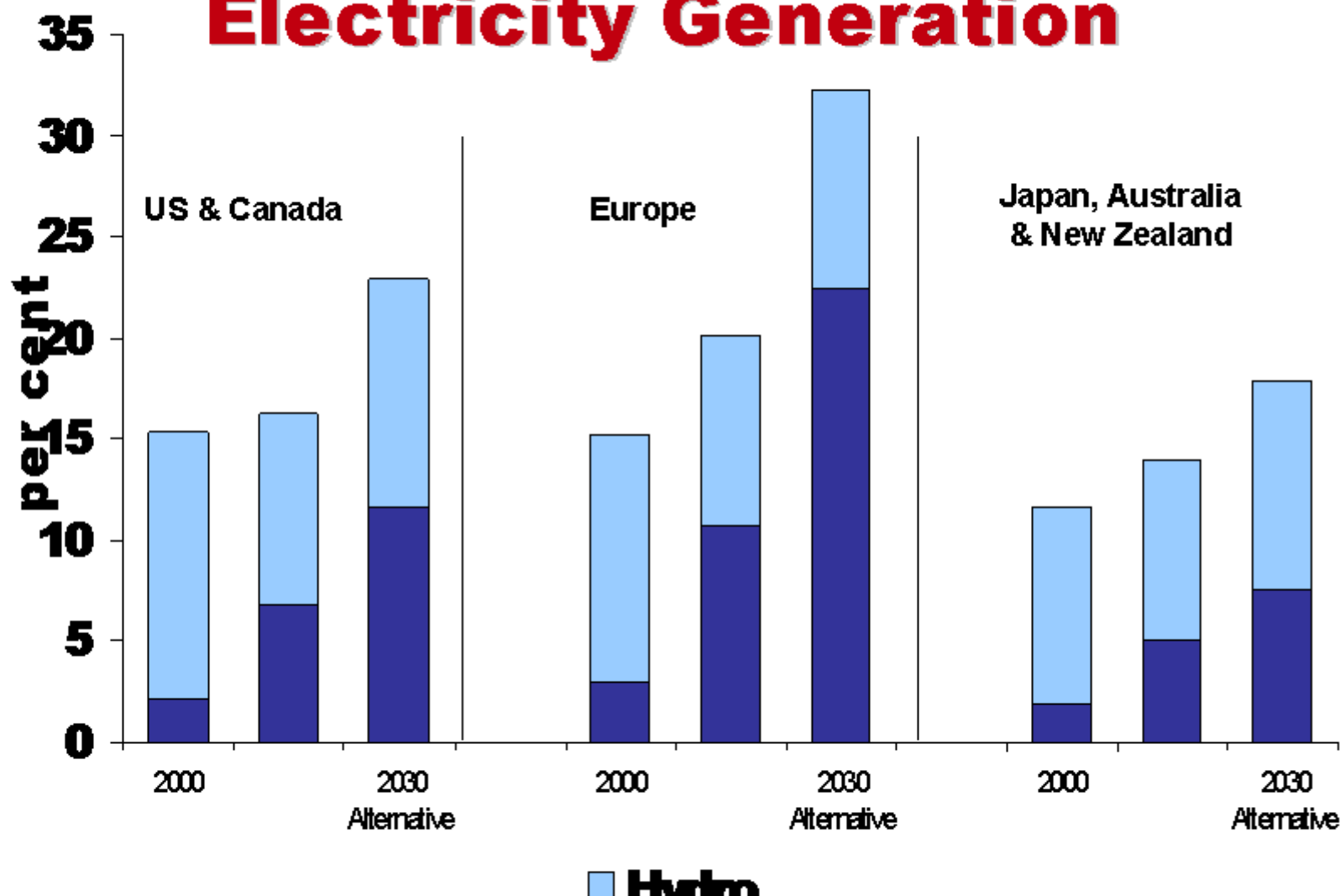
- **Reaching the national RE goals of IEA countries could catalyse sustainable commercial renewable markets in 10 years**
 - **Learning investments in the right order of magnitude necessary to bring costs into competitive range**
 - **Timeframe aggressive, but sufficiently long for market to evolve**
 - **Assessment based on WEO 2000 PowerGen scenario**



2002



Share of Renewables in Electricity Generation



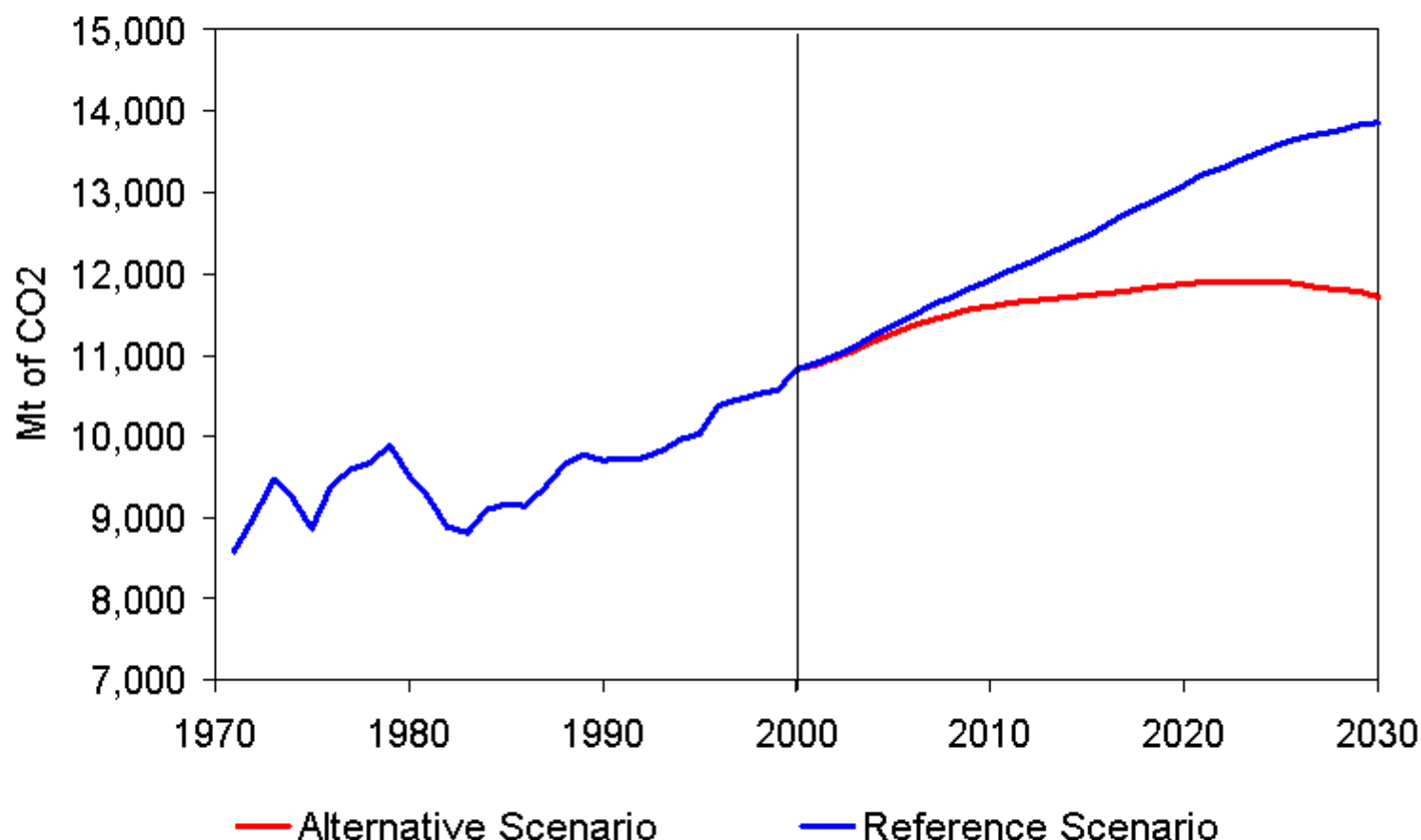
The role of non-hydro renewables is much greater in all OECD regions, especially Europe



2002



OECD CO₂ Emissions



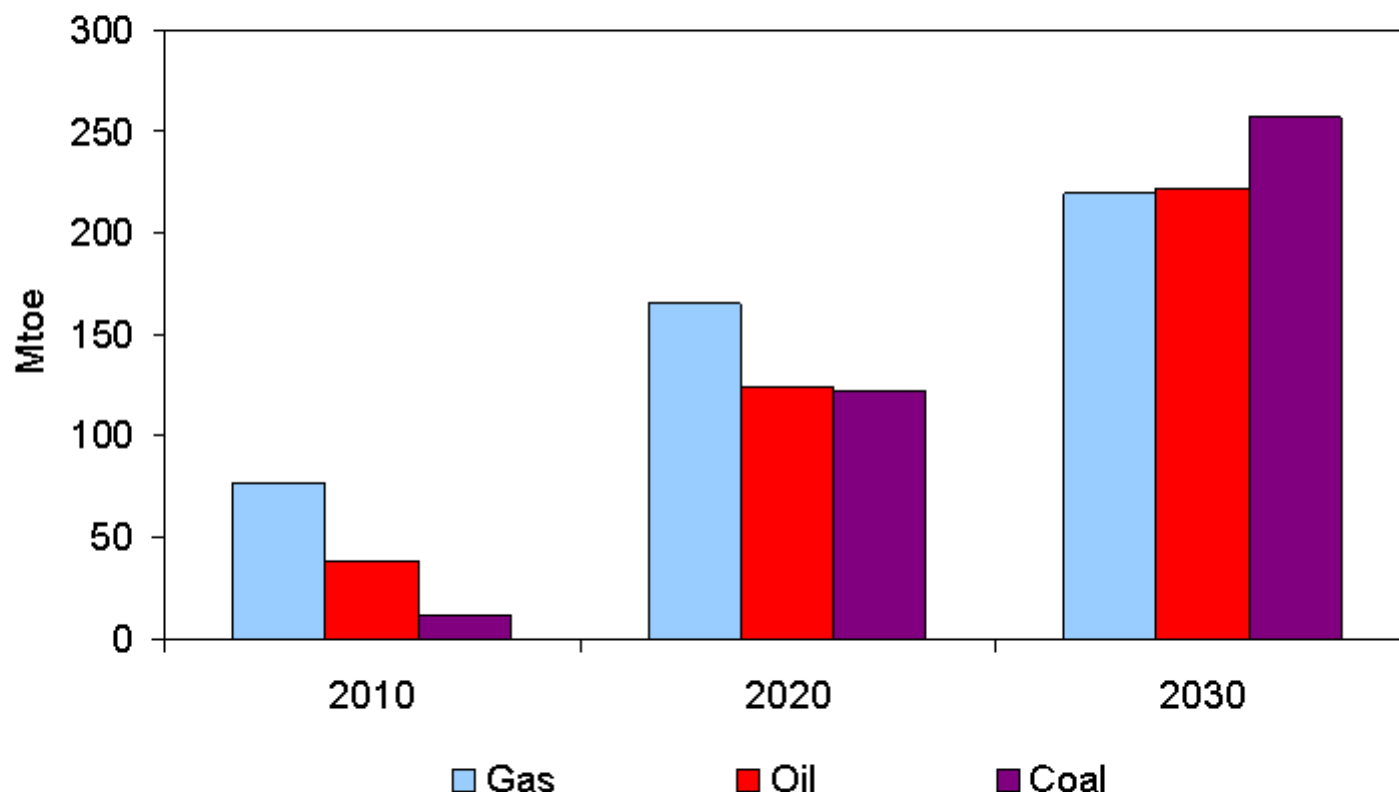
Emissions in the Alternative Scenario stabilise towards the end of the projection period



2002



Fossil-Fuel Savings in the Alternative Scenario



***Energy savings would be 9% of projected demand
in the Reference Scenario in 2030***

An issue with cost

Conventional /KWh

- project cost and promised fuel cost

Renewables /KWh

- project costs

Comparing costs...emerging

Conventional /KWh

- project cost and promised fuel cost
- add large environmental costs

Renewables /KWh

- project costs
- comparative environmental benefits

Comparing costs...comprehensively

Conventional /KWh

- project cost and promised fuel cost
- add large environmental costs
- add fuel volatility costs
- add fuel supply security cost
- add lost jobs benefits
- add cost of narrowing portfolio
- add large tax breaks for fossil

Renewables /KWh

- project costs
- comparative environmental benefits
- fuel volatility reduction benefit
- fuel supply security benefit
- many new jobs benefit
- large portfolio diversification benefit
- add small tax breaks
- add storage and other enabling technology costs

Implication

- Environment has been the key driver of Green Power.
- Economic benefits are equally important to the value of renewables.
- Re-brand:

Green Power = Growth

(not just sustainable, not just environment)



Conclusion

- **Green Power is a key driver to accelerate renewable markets.**
- **Other policy strategies are also necessary to reduce costs and remove barriers.**
- **Trajectory of renewable energy market is into the mainstream.**

Contact us

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